

**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1. (original) A method of maintaining a multidimensional database having layer structure information, the layer structure information representing layer structure of members in the multidimensional database, comprising the steps of:

inputting a member;

determining whether or not corresponding layer information has been registered for the member in the layer structure information;

in the absence of the corresponding information, generating the corresponding layer information according to a predetermined layer rule; and

registering the corresponding layer information in the layer structure information.

Claim 2. (original) The method of maintaining a multidimensional database according to claim 1 wherein the predetermined layer rule includes rules for character-row converting a name of the member and for generating the layer information.

Claim 3. (previously presented) The method of maintaining a multidimensional database according to claim 2 wherein the rules are expressed in regular expression.

Claim 4. (previously presented) The method of maintaining a multidimensional database according to claim 1 wherein the predetermined layer rule includes an identifier of a file and descriptions of a predetermined format, the file containing a source for generating the corresponding layer information.

Claim 5. (previously presented) The method of maintaining a multidimensional database according to claim 4 wherein said generating step further comprising a step of accessing the file to obtain hierarchical information.

Claim 6. (previously presented) The method of maintaining a multidimensional database according to claim 1 wherein the predetermined layer rule includes an identifier of a database and descriptions of a predetermined format, the database containing a source for generating the corresponding layer information.

Claim 7. (previously presented) The method of maintaining a multidimensional database according to claim 6 wherein said generating step further comprising a step of accessing the database to obtain the source.

Claim 8. (original) The method of maintaining a multidimensional database according to claim 1 further comprising additional steps of:

determining whether or not the layer structure information exists before said inputting the member; and

in the absence of the layer structure information, generating the layer structure information that represents the layer structure of the members in the multidimensional database.

Claim 9. (original) The method of maintaining a multidimensional database according to claim 1 wherein the predetermined layer rule further comprises a main layer rule and a plurality of sub-layer rules and further comprising additional steps of:

generating the corresponding layer information according to a sequential application of the main layer rule and the plurality of the sub-layer rules; and

determining whether or not the layer information is successfully generated.

Claim 10. (original) The method of maintaining a multidimensional database according to claim 1 further comprising additional steps of:

inquiring about the layer information for the member in the layer structure information from a calling unit prior to said inputting step; and  
returning the layer information to the calling unit subsequent to said registering step.

Claim 11. (original) A system for maintaining a multidimensional database, comprising:

an input unit for inputting a member;  
a dimensional layer information unit for storing dimensional layer information, the dimensional layer information including layer structure information to represent layer structure of members in the multidimensional database and a layer rule for defining rules to generate the layer structure information; and

a dimensional layer information management unit connected to said input unit and said dimensional layer information unit for managing the dimensional layer information, said dimensional layer information management unit determining whether or not corresponding information has been registered for the member in the layer structure information, said dimensional layer information management unit generating the corresponding layer information according to the layer rule in the absence of the corresponding information and registering the corresponding layer information in the layer structure information.

Claim 12. (original) The system for maintaining a multidimensional database according to claim 11 wherein the layer rule includes rules for character-row converting a name of the member and for generating the layer information.

Claim 13. (previously presented) The system for maintaining a multidimensional database according to claim 12 wherein the rules are expressed in regular expression.

Claim 14. (previously presented) The system for maintaining a multidimensional database according to claim 11 wherein the predetermined layer rule includes an identifier of a file and descriptions of a predetermined format, the file containing a source for generating the corresponding layer information.

Claim 15. (previously presented) The system for maintaining a multidimensional database according to claim 14 wherein said dimensional layer information management unit accesses the file to obtain hierarchical information.

Claim 16. (previously presented) The system for maintaining a multidimensional database according to claim 11 wherein the predetermined layer rule includes an identifier of a database and descriptions of a predetermined format, the file containing a source for generating the corresponding layer information.

Claim 17. (previously presented) The system for maintaining a multidimensional database according to claim 16 wherein said dimensional layer information management unit accesses the database to obtain the source.

Claim 18. (original) The system for maintaining a multidimensional database according to claim 11 wherein said dimensional layer information management unit determines whether or not the layer structure information exists before inputting the member, in the absence of the layer structure information, said dimensional layer information management unit generating the layer structure information that represents the layer structure of the members in the multidimensional database.

Claim 19. (original) The system for maintaining a multidimensional database according to claim 11 wherein the predetermined layer rule further comprises a main layer rule and a plurality of sub-layer rules, said dimensional layer information management unit generating the corresponding layer information according to a sequential application of

the main layer rule and the plurality of the sub-layer rules, said dimensional layer information management unit determining whether or not the layer structure information is successfully generated.

Claim 20. (original) The system for maintaining a multidimensional database according to claim 11 wherein said input unit inquiring the layer information for the member to said dimensional layer information management unit, said dimensional layer information management unit returning the layer information to said input unit subsequent to registering the layer information.

Claim 21. (original) A recording medium for storing computer executable instructions for maintaining a multidimensional database having layer structure information, the layer structure information representing layer structure of members in the multidimensional database, the computer executable instructions performing the steps of:

- inputting a member;
- determining whether or not corresponding layer information has been registered for the member in the layer structure information;
- in the absence of the corresponding information, generating the corresponding layer information according to a predetermined layer rule; and
- registering the corresponding layer information in the layer structure information.

Claim 22. (original) The recording medium for storing computer executable instructions according to claim 21 wherein the predetermined layer rule includes rules for character-row converting a name of the member and for generating the layer information.

Claim 23. (previously presented) The recording medium for storing computer executable instructions according to claim 22 wherein the rules are expressed in regular expression.

Claim 24. (previously presented) The recording medium for storing computer executable instructions according to claim 21 wherein the predetermined layer rule includes an identifier of a file and descriptions of a predetermined format, the file containing a source for generating the corresponding layer information.

Claim 25. (previously presented) The recording medium for storing computer executable instructions according to claim 24 wherein said generating step further comprising a step of accessing the file to obtain hierarchical information.

Claim 26. (previously presented) The recording medium for storing computer executable instructions according to claim 21 wherein the predetermined layer rule includes an identifier of a database and descriptions of a predetermined format, the database containing a source for generating the corresponding layer information.

Claim 27. (previously presented) The recording medium for storing computer executable instructions according to claim 26 wherein said generating step further comprising a step of accessing the database to obtain the source.

Claim 28. (original) The recording medium for storing computer executable instructions according to claim 21 further comprising additional steps of:

determining whether or not the layer structure information exists before said inputting the member; and

in the absence of the layer structure information, generating the layer structure information that represents the layer structure of the members in the multidimensional database.

Claim 29. (original) The recording medium for storing computer executable instructions according to claim 21 wherein the predetermined layer rule further comprises a main layer rule and a plurality of sub-layer rules and further comprising additional steps of:

generating the corresponding layer information according to a sequential application of the main layer rule and the plurality of the sub-layer rules; and  
determining whether or not the layer information is successfully generated.

Claim 30. (original) The recording medium for storing computer executable instructions according to claim 21 further comprising additional steps of:

inquiring about the layer information for the member in the layer structure information from a calling unit prior to said inputting step; and  
returning the layer information to the calling unit subsequent to said registering step.

Claim 31. (new) A method of maintaining a multidimensional database having layer structure information, the layer structure information representing layer structure of members in the multidimensional database, comprising the steps of:

inputting a member;  
determining whether or not corresponding layer information has been registered for the member in the layer structure information;  
in the absence of the corresponding layer information, generating the corresponding layer information according to a predetermined layer rule, the predetermined layer rule including rules for character-row converting a name of the member and for generating the layer information; and  
registering the corresponding layer information in the layer structure information.

Claim 32. (new) A system for maintaining a multidimensional database, comprising:

an input unit for inputting a member;  
a dimensional layer information unit for storing dimensional layer information, the dimensional layer information including layer structure information to represent layer

structure of members in the multidimensional database and a layer rule for defining rules to generate the layer structure information; and

    a dimensional layer information management unit connected to said input unit and said dimensional layer information unit for managing the dimensional layer information, said dimensional layer information management unit determining whether or not corresponding information has been registered for the member in the layer structure information, said dimensional layer information management unit generating the corresponding layer information according to the layer rule in the absence of the corresponding information and registering the corresponding layer information in the layer structure information, the predetermined layer rule including rules for character-row converting a name of the member and for generating the layer information.

Claim 33. (new) A recording medium for storing computer executable instructions for maintaining a multidimensional database having layer structure information, the layer structure information representing layer structure of members in the multidimensional database, the computer executable instructions performing the steps of:

    inputting a member;

    determining whether or not corresponding layer information has been registered for the member in the layer structure information;

    in the absence of the corresponding information, generating the corresponding layer information according to a predetermined layer rule, the predetermined layer rule including rules for character-row converting a name of the member and for generating the layer information; and

    registering the corresponding layer information in the layer structure information.